SEMS DocID 2332343

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The Trusted Integrator for Sustainable Solutions

19 March 2012

U.S. Environmental Protection Agency
Region 3
Attn: Greg Ham, 3HS31
701 Mapes Road
Fort Meade, MD 20755-5350

Subject: Final Removal Site Evaluation Report
Removal Site Evaluation for New Jersey Fireworks, Elkton, MD
Technical Direction Document No.: WS01-10-08-004

Dear Mr. Ham:

As you requested, enclosed is a signed copy of the Final Removal Site Evaluation Report for the Removal Site Evaluation for New Jersey Fireworks project.

If you have any questions regarding this report, please contact me at "non responsive based on revised scope" [redacted]

Very truly yours,

WESTON SOLUTIONS, INC.

"non responsive based on revised scope" [redacted]

"non responsive based on revised scope" [redacted]
START Project Team Leader

Enclosures

CBI ORIGINAL

FINAL
REMOVAL SITE EVALUATION REPORT

ENVIRONMENTAL PROTECTION AGENCY
SUPERFUND TECHNICAL ASSESSMENT RESPONSE TEAM
REMOVAL SITE EVALUATION
NEW JERSEY FIREWORKS
ELKTON, MARYLAND

TDD NO.: WS-01-10-08-004

Prepared For:

U.S. ENVIRONMENTAL PROTECTION AGENCY REGION 3
1650 ARCH STREET
PHILADELPHIA, PENNSLYVANIA 19103

Prepared By:

WESTON SOLUTIONS, INC.
1400 Weston Way
West Chester, Pa 19380

WESTON PROJECT NO.: 20403.012.001.0019.00

FEBRUARY 2012

FINAL

REMOVAL SITE EVALUATION REPORT

ENVIRONMENTAL PROTECTION AGENCY
SUPERFUND TECHNICAL ASSESSMENT RESPONSE TEAM
REMOVAL SITE EVALUATION
NEW JERSEY FIREWORKS

ELKTON, MARYLAND

TDD NO.: WS-01-10-08-004

"non responsive based on revised scope"

WESTON – Field Team Leader

"non responsive based on revised scope"

3/20/2012
Date

"non responsive based on revised scope"

WESTON – Program Manager

"non responsive based on revised scope"

3/20/12
Date

TABLE OF CONTENTS

LIST OF APPENDICES

LIST OF TABLES

LIST OF ACRONYMS

ATF	Bureau of Alcohol, Tobacco and Firearms
BIP	blow-in-place
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
dB	decibel
DDESB	Department of Defense Explosives Safety Board
DID	Data Item Description
DoD	Department of Defense
DoDI	Department of Defense Instruction
DOT	U.S. Department of Transportation
DQCR	Daily Quality Control Report
EM	Engineering Manual
EOD	Explosive Ordnance Disposal
EPA	U.S. Environmental Protection Agency
EPP	Environmental Protection Plan
ESP	Explosives Site Plan
EOTI	Explosive Ordnance Technologies, Inc.
GPS	Global Positioning System
HASP	Health and Safety Plan
HE	high explosive
HTW	hazardous or toxic waste
ID	identification
m	meter
MEC	munitions of explosive concern
MD	munitions debris
MPPEH	material potentially presenting an explosive hazard
MSDS	Material Safety Data Sheet
NAD	North American Datum
NJF	New Jersey Fireworks
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
PM	Project Manager
PPE	personal protective equipment
QC	quality control

LIST OF ACRONYMS (Continued)

RSE	Removal Site Evaluation
SOP	standard operating procedure
SO/QCS	Safety Officer / Quality Control Specialist
SUXOS	Senior UXO Specialist
TDD	Technical Direction Document
U.S.	United States
USACE	U.S. Army Corps of Engineers
USGS	U.S. Geological Survey
UTM	Universal Transverse Mercator
UXO	unexploded ordnance
UXOSO	UXO Safety Officer
WESTON®	Weston Solutions, Inc.
WP	Work Plan
WWII	World War II

1. INTRODUCTION

1.1 GENERAL

Weston Solutions, Inc. (WESTON®) performed a Removal Site Evaluation (RSE) at the Former New Jersey Fireworks site (NJF) under Superfund Technical Assessment Response Team (START) contract No. EP-S3-10-05. The field work and summary report were authorized under Technical Direction Document (TDD) WS-01-10-08-004, Amendment D, and was performed in accordance with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP).

This Removal Site Evaluation Report (RSER) describes the work elements and results the ordnance assessment conducted at the Former NJF site. The site comprises 61.4 acres of land associated with former firework and pyrotechnic manufacturing, some of which were used for World War II (WWII) ordnance production. The area has been determined to be of low risk for potentially encountering munitions of explosive concern (MEC). Field work was conducted the week of October 24, 2011.

1.2 PROJECT LOCATION

The Former NJF site is located at 1726 E. Old Philadelphia Road in Elkton, Cecil County, Maryland. The site is located just north of Elk Neck State Forest and is situated in a rural setting. The site is comprised of eastern, central and western sections. The site is bordered to the north by Route 7, to the east by an unmanned tributary of Mill Creek and a trailer park, to the south by Amtrak Railroad and Mill Creek, and to the west by a septic cleaning company. The coordinates at the center of the site are approximately 39.6° N latitude and 75.87° W longitude. The site and surrounding areas are shown on Figure 1, Site Location Map, located in **Appendix A**.

1.3 NEW JERSEY FIREWORKS SITE DESCRIPTION

According to the Maryland Department of Assessment and Taxation, Cecil County, Real Property Data Search, the site contains three parcels:

- Map 32, Grid 4, Parcel P20 contains 26.3 acres. This encompasses the eastern portion of the site, which contains the office trailer, Burn Pit Area 1 (BP 1), Disposal Area 1 (DA 1),

Disposal Area 2 (DA 2), former Sparkler Building, Tracer Element Area (TEA), and several large and small sheds.

- Map 32, Grid 4, Parcel P165 contains 32.07 acres. This encompasses the central portion of the site, which contains Burn Pit Area 2 (BP 2) and several sheds and trailers.
- Map 32, Grid 4, Parcels P482 contains 3.02 acres. This is the western part of the site, which contain the Route 7 Dump Area.

The site ranges from 25 feet to 75 feet above mean sea level (MSL) and gently slopes to the south towards Mill Creek. The western portion of the site consists of a former clay quarry filled with demolition and construction debris disposed of by the State Highway Administration during the early 1980s. Prior to disposal of highway construction materials, the quarry received wastes from ordnance/fireworks manufacturing facilities. The eastern portion of the site contains several warehouse buildings, including the former Sparkler Building, which was destroyed in March of 2007. The central portion of the site is wooded. The roads on the site are unimproved and the easternmost portion of the site is fenced and access is restricted by a locked gate. The Route 7 Dump Area is also fenced. The Amtrak railroad and Mill Creek proved a natural barrier to the site along the southern border. Elk Neck State Forest is located south of the site on the southern side of the Amtrak Rail Line.

1.4 NEW JERSEY FIREWORKS SITE PROFILE

1.4.1 Site History

The former NJF site was used to manufacture fireworks and pyrotechnic products and appears to have been used to function-test products for quality control purposes. In addition to the items described above, it is believed that the area may have been used to test pyrotechnic products, including Document Destroyers containing Thermite. A nearby location is believed to have been used for un-permitted disposal of waste material.

In March 2006, a person operating a recreational metal detector reportedly discovered what was thought to be three grenade pins in an open and fallow area in the northeastern portion of the site.

This allegation was never substantiated. Then on October 11, 2006, MEC items were discovered onsite during the excavation of a septic field. Personnel from the Maryland Fire Marshall's Office tentatively identified the MEC as unprimed antiaircraft tracer rounds. Ten of the MEC were detonated in a remote portion of the site by Maryland Fire Marshall Office personnel.

In February 2007, Explosive Ordnance Technologies, Inc (EOTI) conducted a MEC "mag and dig" survey over a two acre area. A burn/disposal area encompassing approximately 0.5 acres and containing several fuses for 100-pound, sand-filled, black powder practice bombs was discovered. A burn/disposal area encompassing approximately 0.25 acres and containing several fuses, pins, and spoons was also discovered. During this time, a magazine (building 26) was discovered immediately west of the 0.25-acre burn/disposal area that had several bags marked "oxidizer" stacked up on the southern outside wall. Black powder was also observed in the three buildings between the 0.25-acre burn/disposal area and the Sparkler Building.

In December of 2007, Tetra Tech, the Region III START contractor at the time, subcontracted Enviroscan to perform a "mag and flag" survey in order to assess the extent of the MEC contamination on site. This survey focused on several areas of interest, including BP1, BP2, DA1, DA2 and TEA. Based on the results of that survey, Tetra Tech identified anomalies in several grids within each of the survey areas, with the exception of DA1 due to excessive surficial metallic debris. The locations of the anomalies were identified as areas of excavation. This report documents WESTON's investigation of the "excavation areas" shown in **Appendix B** of this report.

1.4.2 Current Site Operations

A pallet manufacturing company currently uses the eastern portion of the site. Operations include the delivery of lumber, processing of lumber and construction of pallets. Heavy machinery operates intermittently in the open area where the lumber is staged. Cut lumber is then processed into palates in the warehouse in the southeast area of the site. The owner and manager of the facility were contacted by START and made aware of the MEC investigation prior to commencement of site activities. START maintained coordination with the facility manager throughout the project in order to minimize MEC investigation impacts on site operations.

1.5 PROJECT ORGANIZATION

WESTON provided MEC support for the site investigation. Five UXO personnel were onsite performing field work for the duration of the investigation. This included one Senior UXO Supervisor (SUXOS), one UXO Safety Officer (UXOSO), one Tech III, and two Tech I/II. The SUXOS was responsible for planning, coordinating and supervising all on-site MEC-related activities. The SUXOS reported directly to the START Field Team Leader (FTL).

1.6 POTENTIAL MUNITIONS AND EXPLOSIVES OF CONCERN

Based on the findings from previous investigations at the site, the following MEC types were anticipated:

- MKII Hand Grenade Fuze
- Unprimed Anti-Aircraft Rounds
- 100lb M38 Practice Bomb Fuze

1.6.1 Munition with the Greatest Fragmentation Distance

Based on the above list, the 100lb M38 Practice Bomb Fuze was selected as the munition with the greatest fragmentation distance (MGFD). This model practice bomb uses a M1A1 spotting charge (non-fragmenting, blast only) with a net explosive/ filler weight (NEW) of approximately 3 pounds. The minimum separation distances are summarized in **Table 1-1**.

Table 1-1: Minimum Separation Distances

Minimum Separation Distances					
Area	Munition With the Greatest Fragmentation Distance (MGFD)	Feet (ft)			
		For Unintentional Detonations		For Intentional Detonations	
		Team Separation Distance (K40) [1]	Hazardous Fragment Distance (HFD)	Without Engineering Controls (MFR)	Using Engineering Controls
New Jersey Fireworks Site	M1A1 spotting charge [2], for a Bomb, Practice, 100-lb, M38	43 ft	43 ft	349 ft	349-ft

Notes:
1. MSD for non-essential personnel for MEC items that do not have a fragment producing design.
2. M1A1 has a net explosive weight of approximately 3-lbs. The TNT equivalent weight (pressure) was calculated to be 0.8-lbs using a TNT equivalency of 0.4.

2. FIELD INVESTIGATION PLAN

2.1 OVERALL REMOVAL SITE EVALUATION APPROACH

The goal of the RSE was to intrusively investigate the excavation areas shown in **Appendix B** These excavation areas were marked out using GPS equipment and were surveyed using a "mag and dig" approach. All anomalies encountered were excavated to a maximum depth of two feet using hand tools.

No MEC was discovered during the investigation. All munitions related items were found to be inert and certified as material designated as safe (MDAS) or metal scrap by the SUXOS. No MEC procedures were utilized during site activities since no MEC was encountered.

2.2 SITE PREPERATION

Limited site preparation was required due to restricted public access and traffic. One Call of Delaware was contacted and utilities present were marked out prior to intrusive activities. A copy of the One-Call Ticket can be found in **Appendix C**. No brush clearing was required prior to or during intrusive operations. The EPA OSC made contact with the onsite facility to inform them of the MEC investigation activities prior to the start of field operations.

2.3 GRID LOCATION AND MARK-OUT

Grid locations were marked out by the START FTL. The grid locations were based upon the results of a previous geophysical survey mentioned in Section 1.4.1. These were identified as areas with the highest concentration of metallic anomalies for investigation.

2.3.1 Navigation and Positioning Equipment

The Trimble Geo XT was used to locate the grid listed in **Appendix B**. The Geo XT is capable of sub-meter accuracy and was used mark the corners of each "mag and dig" grid.

2.3.2 Grid Mark-Out

All grids were located with the Trimble Geo XT and marked with non-metallic pin flags. The grid IDs and dimensions were recorded on each corner-flag. The grid locations were based on the coordinates generated in **Appendix B**. However, the exact grid locations were adjusted in the field to compensate for field conditions, accessibility and cultural features observed. Some grid locations were either removed or merged at the discretion of the OSC based on conditions in the field.

The grids marked out for investigation are listed below:

- Excavation Area #2: Grids 1, 4, 5, 6 and 7.
- Excavation Area #3: Grids 1, 2 and 5.
- Excavation Area #4: Grids 1, 2, 3 and 4.
- Excavation Area #5: Grids 1, 2 and 3.
- Excavation Area #6: Grids 1, 2 and 3.
- Excavation Area #7: Grids 1 and 2.

Grids that are listed in **Appendix B** but were not marked out for investigation include: Excavation Area #2, Grids 2 and 3; and Excavation Area #3, Grids 3 and 4. These grids were not investigated due to inaccessibility from flooding and lumber stockpiles.

2.4 INTRUSIVE INVESTIGATION

2.4.1 Geophysical Equipment

The White's XLT All-Metals Detector consists of a hand-held, two-coil design that utilizes the electromagnetic method to detect ferrous and non-ferrous metals. An audible signal sounds when the sensors are swept over conductive material. The volume and frequency of the signal changes as the sensor pinpoints the center of the source body. The instrument sensitivity can be adjusted to increase or decrease the capability to detect small, metallic materials.

2.4.2 Mag and Dig Methodology

Anomalies detected during the "mag and dig" surveys were intrusively investigated using hand tools. Surveys performed were full coverage over the designated grid. UXO Technicians used a line spacing of 5 feet for each grid. All non-essential personnel were evacuated from the area in accordance with the appropriate minimum separation distance as presented in **Table 1-1**.

The UXO Team excavated each anomaly to determine/assess if MEC was present. The depths of excavations did not exceed two feet. In some cases the anomaly remained in the hole if the item was determined to be cultural debris and extended further than two feet.

After the suspected source of the anomaly was removed from the excavation, the open hole was rechecked to ensure additional conductive material did not remain. When it was confirmed that no anomalous responses remained in the hole, the hole was backfilled and tamped. If the anomaly source material was found to be non-munitions related and it could not be feasibly removed from the excavation, the material was left in place and a note was made on the field dig sheet. This occurred for 16 items located during intrusive investigations. The area around each anomaly was re-checked to ensure that the anomaly was not masking additional anomalies that required investigation.

All access/excavation holes were backfilled with the soils excavated from the hole. No additional post-excavation restoration efforts were deem necessary by the OSC due to the undeveloped condition of the property.

2.5 INVESTIGATION-DERIVED WASTES

No investigation-derived waste (IDW) was generated during the RSE. All PPE and disposable sampling equipment were considered non-hazardous. PPE and sampling equipment were placed in a plastic bag and disposed in an appropriate refuse container.

2.6 POST-ACTIVITY SITE RESTORATION

Restoration was limited to replacing and compacting the excavated fill material from intrusive activity. No additional restoration activities were conducted.

All wastes were removed from the site immediately upon completion of each day's field activities. All metal scrap accumulated during the field investigation was consolidated on-site at the request of the OSC. No additional post–activity cleanup was required. A post–activity inspection was conducted by the SUXOS, SO/QCS and START FTL to ensure the location was left clean.

3. REMOVAL SITE EVALUATION RESULTS

During "mag and dig" operations, descriptions and locations of recovered material were recorded onto grid sheets by the UXOSO. The SUXOS reviewed the grid sheets on a daily basis and submitted them to the START FTL. The grid sheets are included in **Appendix D**. The results of "mag and dig" activity for each grid are summarized in **Table 3-1**.

3.1 ITEMS FOUND

The items recovered during the RSE were primarily composed of scrap metal including nails, wire, rebar and other cultural debris. One expended hand grenade fuze was located in Excavation Area #2, Grid #7. One empty 40mm base fuze casing was located in Excavation Area #4, Grid #1. Both items were classified as MDAS and handed over to the OSC.

Table 3-1: Summary of Items Found

Excavation Area	Grid ID	Grid Size	Date of Investigation	Item(s) Found
2	1	20'x20'	10/25/2011	Metal Scrap
2	4	25'x20'	10/25/2011	Metal Scrap
2	5	20'x50'	10/25/2011	Metal Scrap
2	6	20'x40'	10/24/2011	Metal Scrap
2	7	25'x50'	10/24/2011	Metal Scrap and MDAS
3	1	50'x100'	10/26/2011	Metal Scrap
3	2	25'x25'	10/26/2011	Metal Scrap
3	5	25'x25'	10/26/2011	Metal Scrap
4	1	50'x30'	10/25/2011	Metal Scrap and MDAS
4	2	75'x20'	10/24/2011	Metal Scrap

4	3	30'x30'	10/25/2011	Metal Scrap
4	4	30'x20'	10/25/2011	Metal Scrap
5	1	40'x10'	10/26/2011	Metal Scrap
5	2	30'x40'	10/26/2011	Metal Scrap
5	3	30'x20'	10/26/2011	Metal Scrap
6	1	20'x20'	10/27/2011	Metal Scrap
6	2	10'x20'	10/27/2011	Metal Scrap
6	3	10'x10'	10/27/2011	Metal Scrap
7	1	60'x20'	10/26/2011	Metal Scrap
7	2	50'x30'	10/26/2011	Metal Scrap

3.2 SUMMARY

WESTON START performed a removal site evaluation for the presence of MEC at the New Jersey Fireworks site in Elkton, MD. Fieldwork was completed on October 28th, 2011. No MEC was encountered during the investigation.

4. REFERENCES

DoD (Department of Defense). 2004. Technical Paper (TP) 18, Minimum Qualifications for Unexploded Ordnance (UXO) Technicians and Personnel.

DoD (Department of Defense). 2008. Department of Defense Instruction 4140.62, Material Potentially Presenting an Explosive Hazard. November 25, 2008.

DoD (Department of Defense). 2009. 6055.09 STD, Ammunition and Explosive Safety Standards. August 2009.

Enviroscan, Inc. 2009. *Final Report – Subsurface UXO Detection Survey, New Jersey Fireworks Site, Elkton, Maryland.* Prepared for Tetra Tech, Inc, Boothwyn, Pennsylvania, September 2009.

EOTI. 2007. *Site Inspection For Munitions of Explosive Concern, New Jersey Fireworks Site, Elkton, Maryland.* Prepared for the Maryland Department of the Environment Waste Management Administration, ERRP, Baltimore, Maryland, March 2007.

EPA (U.S. Environmental Protection Agency). 2008. *Munitions and Explosives of Concern Hazard Assessment Methodology.* EPA 505B08001. Interim October 2008.

Tetra Tech, Inc. 2008. *Trip Report for the New Jersey Fireworks Site, Elkton, Maryland.* Prepared for the U.S. EPA Region 3, Philadelphia, Pennsylvania. June 2008.

Tetra Tech, Inc. 2010. *Synopsis of All Site Related Activity, Jan 2007 to June 2010, New Jersey Fireworks Site, Elkton, Maryland.* Prepared for the U.S. EPA Region 3, Philadelphia, Pennsylvania. June 2010.

APPENDIX A
SITE MAP

Data Sources: USGS 7.5-Minute Series Topographic Quadrangles: Elkton, Maryland - Delaware, 1992; North East, Maryland, 1992

New Jersey Fireworks Site
Elkton, Cecil County, Maryland

Coordinate System:
WGS_1984_Web_Mercator_Auxiliary_Sphere
Projection: Mercator_Auxiliary_Sphere

GCS_WGS_1984
Datum: D_WGS_1984

N

0 1,250 2,500
Feet

Figure 1
Site Location Map

TDD#: WS01-10-08-004
Contract: EP-S3-10-05

WESTON SOLUTIONS

File: \\Fsfed01\TIG\EPA_Region_III\NJ_Fireworks\MXD\Site_loc.mxd, 09-Feb-11 13:07, zieglera

APPENDIX B
EXCAVATION AREA MAP

Legend

- Excavation Area
- Excavation Area Corners

N

MD State Plane, NAD83, feet

1:800

0 30 60

Feet

New Jersey Fireworks Site
Elkton, Cecil County, Maryland

Excavation Areas Depicted on Tetratech Figure 2

TDD#: WS01-10-08-004
Contract: EP-S3-10-05

WESTON SOLUTIONS

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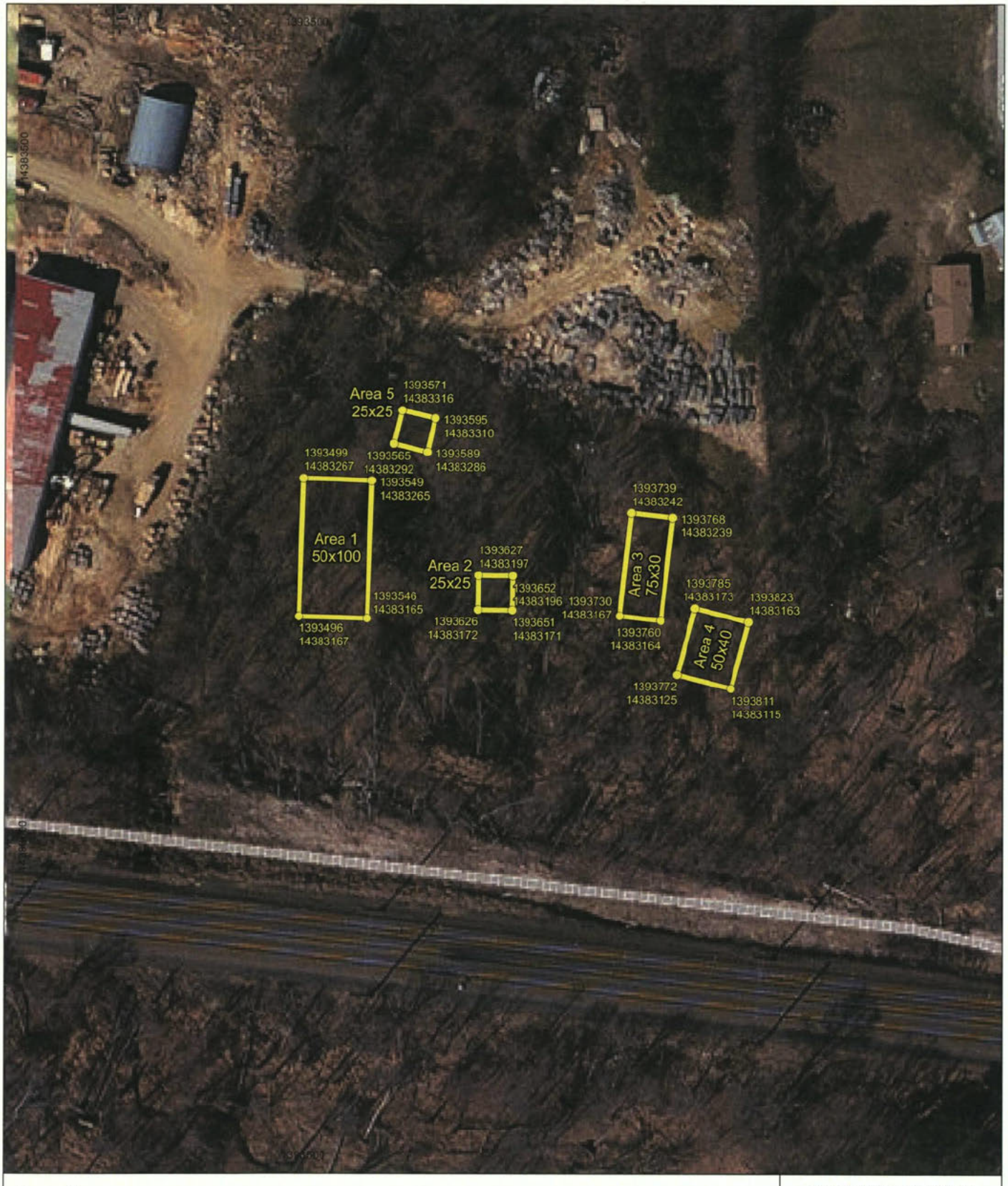

Legend

- Excavation Area
- Excavation Area Corners

N

MD State Plane, NAD83, feet

1:1,200

0 50 100

Feet

New Jersey Fireworks Site
Elkton, Cecil County, Maryland

Excavation Areas Depicted on Tetratech Figure 3

TDD#: WS01-10-08-004
Contract: EP-S3-10-05

WESTON SOLUTIONS

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Legend

- Excavation Area
- Excavation Area Corners

N

MD State Plane, NAD83, feet

1:400

0 15 30

Feet

New Jersey Fireworks Site
Elkton, Cecil County, Maryland

Excavation Areas Depicted on Tetratech Figure 4

TDD#: WS01-10-08-004
Contract: EP-S3-10-05

WESTON SOLUTIONS

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Legend

- Excavation Area
- Excavation Area Corners

N

MD State Plane, NAD83, feet

1:400

0 15 30

Feet

New Jersey Fireworks Site
Elkton, Cecil County, Maryland

Excavation Areas Depicted on Tetratech Figure 5

TDD#: WS01-10-08-004
Contract: EP-S3-10-05

WESTON SOLUTIONS

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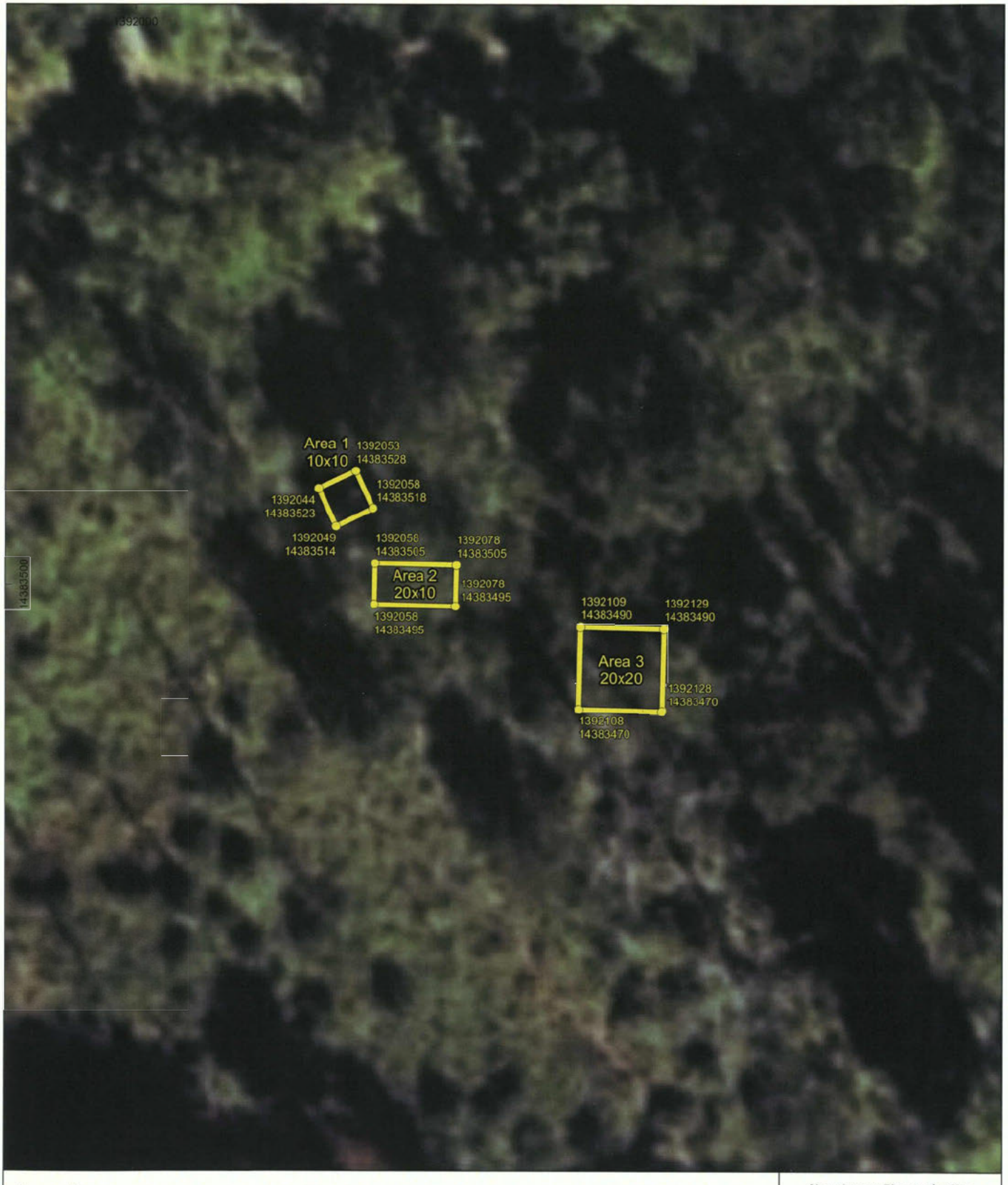

Legend

- Excavation Area
- Excavation Area Corners

N

1:400

MD State Plane, NAD83, feet

0 15 30

Feet

New Jersey Fireworks Site
Elkton, Cecil County, Maryland

Excavation Areas Depicted on Tetratech Figure 6

TDD#: WS01-10-08-004
Contract: EP-S3-10-05

WESTON SOLUTIONS

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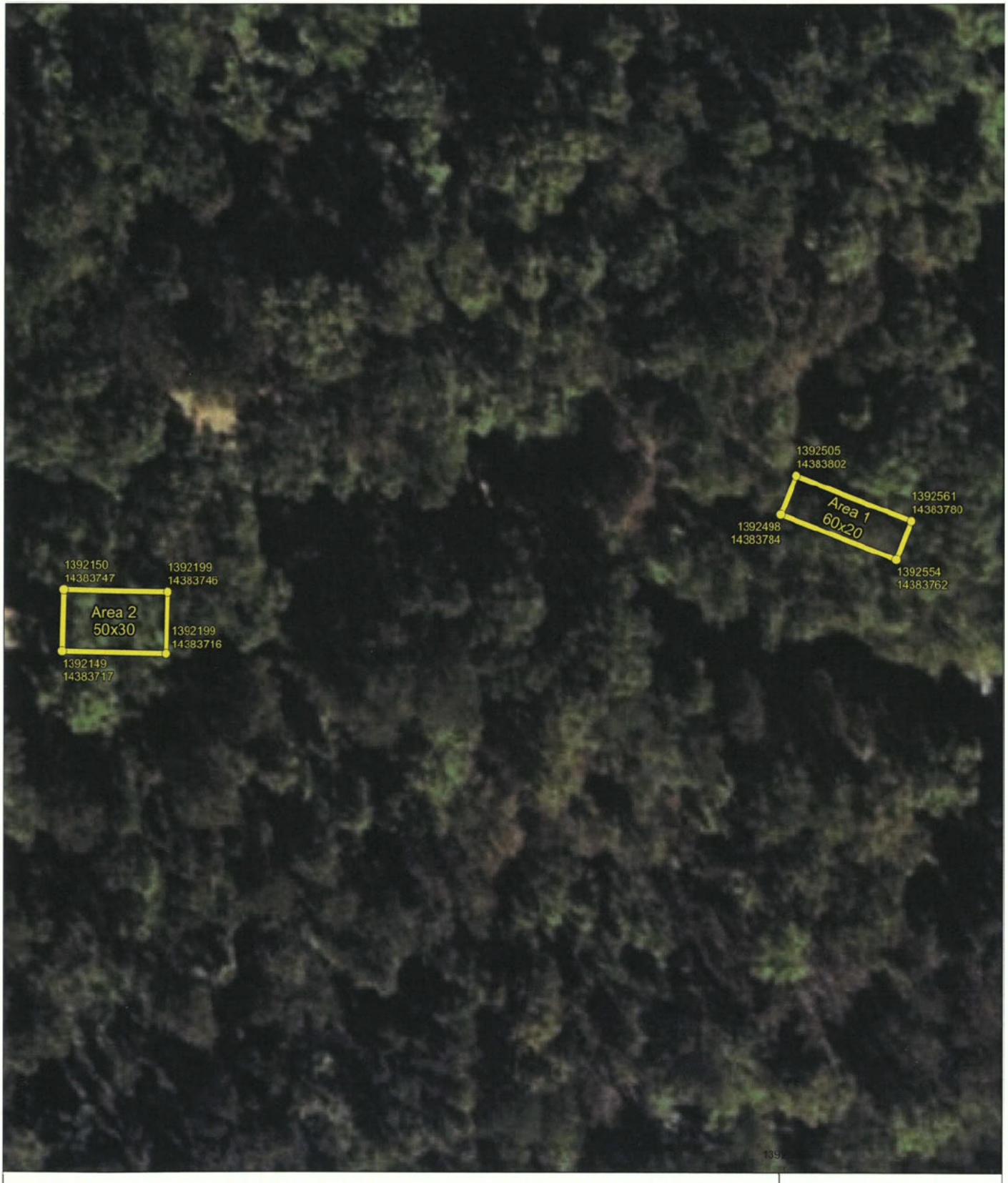

Legend

- Excavation Area
- Excavation Area Corners

N

MD State Plane, NAD83, feet

1:800

0 30 60

Feet

New Jersey Fireworks Site
Elkton, Cecil County, Maryland

Excavation Areas Depicted on Tetratech Figure 7

TDD#: WS01-10-08-004
Contract: EP-S3-10-05

WESTON SOLUTIONS

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APPENDIX C
ONE-CALL TICKET

Novak, Paul

From: TicketCheck@managetickets.com
Sent: Thursday, October 20, 2011 9:41 AM
To: [redacted] "non responsive based on revised scope"
Subject: [BULK] Ticket Check Status for MD Ticket 11540953

Importance: Low

Ticket Number: **11540953**
Location: 1726 EAST OLD PHILADELPHIA RD ELKTON, MD

As of **10/20/2011 09:41:22**, participating facility owners have responded to Ticket Check as follows:

District Code	Status
AT&T TRANSMISSION	Clear/No conflict
CECIL COUNTY PUBLIC WORKS	Clear/No conflict
DELMARVA POWER/PREMIER	Marked
TOWN OF ELKTON	Clear/No conflict
MCI	Clear/No conflict
QWEST COMMUNICATIONS	Clear/No conflict
COMCAST/ UTILIQUEST	Clear/No conflict
VERIZON - DANELLA	Marked

To review this ticket in its entirety, visit Search and Status® on **www.managetickets.com**.
Please direct all questions and concerns to your one call center.

APPENDIX D
GRID SHEETS

WESTON SOLUTIONS

GRID SWEEP LOG

Project Name: New Jersey Fireworks

AOE: 2 Grid: 1 20 x 20

Date: 25 Oct 11

Team No.: 1

Sift: ☐ Mag & Dig ☑

20 NE

20

LOCATION	ITEM TYPE	QUANTITY	DEPTH	INSTRUMENT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT

EACH LINE INCREMENT = ____ X ____ FT.

Comments: 0940 - 1015

pic 1394 (grid)

pic 1395 findings (~20')

WESTON SOLUTIONS

GRID SWEEP LOG

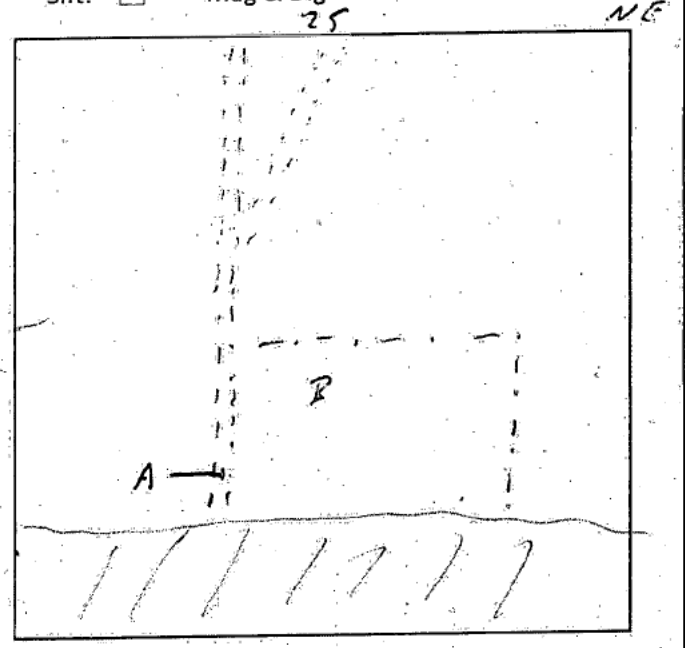
Project Name: New Jersey Fireworks

AOE: 2 Grid: 4 (25x20)

Date: 25 Oct 11

Team No.: 1

Sift: ☐ Mag & Dig ☑



LOCATION	ITEM TYPE	QUANTITY	DEPTH	INSTRUMENT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT

EACH LINE INCREMENT = ____ X ____ FT.

Comments:
White # 22185
22158
A: culvert drain pipe ~2" pipe
B: concrete pad/foundation

WESTON SOLUTIONS

GRID SWEEP LOG

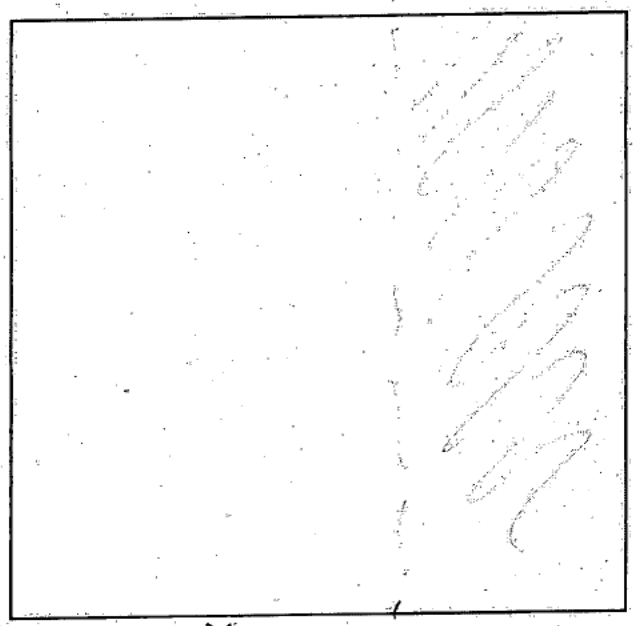
Project Name: New Jersey Fireworks

AOE: 2 Grid: 5 30x50

Date: 24 Oct 11 / 25 Oct 11

Team No.: 1

Sift: ☐ Mag & Dig ☑



LOCATION	ITEM TYPE	QUANTITY	DEPTH	INSTRUMENT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT

EACH LINE INCREMENT = ____ X ____ FT.

Comments: Instrument USED RFW 24 Oct WHITE MXT S/N 22185 / 25 Oct 22185 } RFW 22158 } White

Pics 1390-1392 (1393 could also grid)

WESTON SOLUTIONS

GRID SWEEP LOG

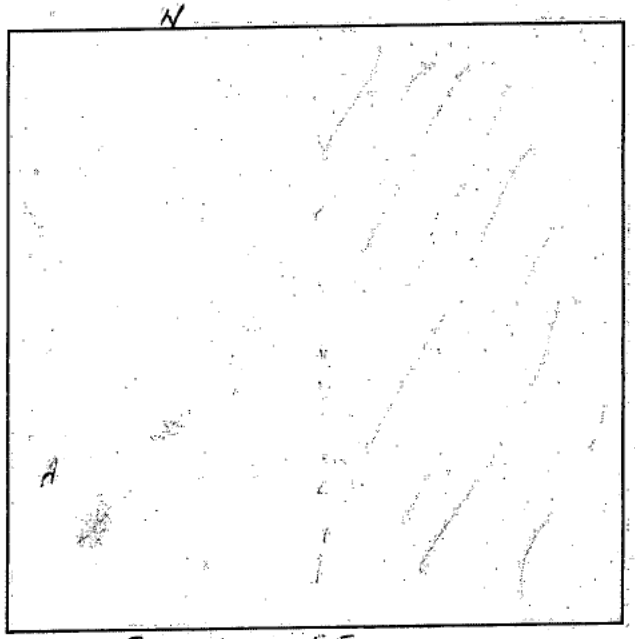
Project Name: New Jersey Fireworks

AOE: 2 Grid: 6 70x40

Date: 240ct11

Team No.: 1

Sift: ☐ Mag & Dig ☑



EACH LINE INCREMENT = ____ X ____ FT.

LOCATION	ITEM TYPE	QUANTITY	DEPTH	INSTRUMENT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT

Comments:
A guide rod/wire pic #1384
approx 25# non ordn. scrap

WESTON SOLUTIONS

GRID SWEEP LOG

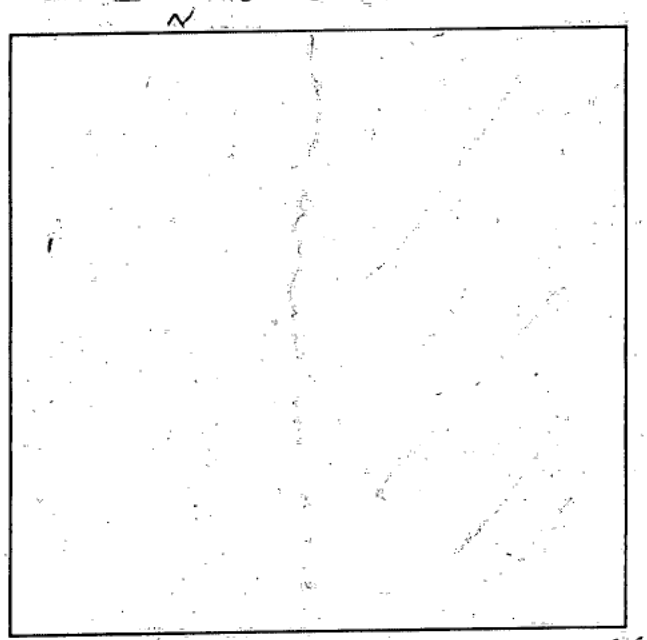
Project Name: New Jersey Fireworks

AOE: 2 Grid: 7 25+50

Date: 24 Oct 11

Team No.: 1

Sift: ☐ Mag & Dig ☑



LOCATION	ITEM TYPE	QUANTITY	DEPTH	INSTRUMENT
1	EXP Hand Grenade Fuze Dic #1583	1	3"	White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT

EACH LINE INCREMENT = ____ X ____ FT.

Comments:

WESTON SOLUTIONS

GRID SWEEP LOG

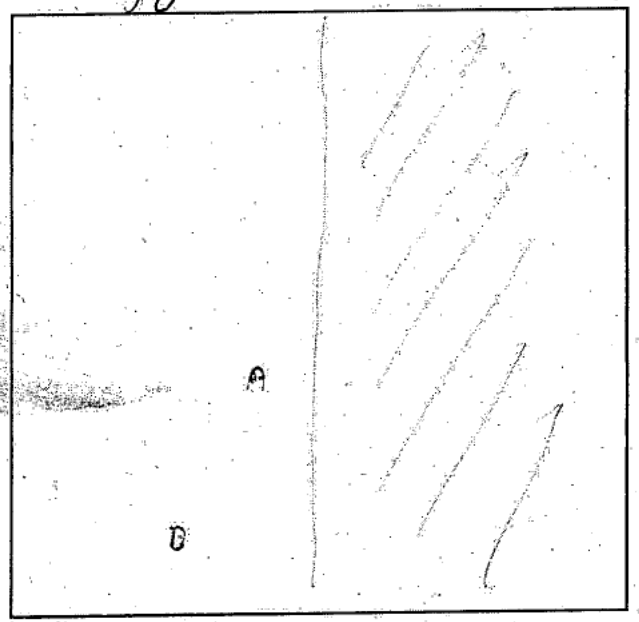
Project Name: New Jersey Fireworks

AOE: 3 Grid: 6 50x100

Date: 25 Oct 11 - 26 Oct 11

Team No.: 1

Sift: ☐ Mag & Dig ☑



LOCATION	ITEM TYPE	QUANTITY	DEPTH	INSTRUMENT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT

EACH LINE INCREMENT = ____ X ____ FT.

Comments: 1420-1-0815 ~80# Pic 1405: flag 1406 gen. 1407} findings

A: steel fence post

B: bed spring frame

WESTON SOLUTIONS

GRID SWEEP LOG

Project Name: New Jersey Fireworks

AOE: 3 Grid: 2 25x25

Date: 26 Oct 11

Team No.: 1

Sift: ☐ Mag & Dig ☑

NE

25

25

LOCATION	ITEM TYPE	QUANTITY	DEPTH	INSTRUMENT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT

EACH LINE INCREMENT = ____X____FT.

Comments: Pic 1409 - flag
1412 - gen findings ~20"
(insulator)
0830 - 0850

WESTON SOLUTIONS

GRID SWEEP LOG

Project Name: New Jersey Fireworks

AOE: J Grid: 5 25x25

Date: 26 Oct 11

Team No.: 1

Sift: ☐ Mag & Dig ☑

(A) NE

25

25

LOCATION	ITEM TYPE	QUANTITY	DEPTH	INSTRUMENT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT

EACH LINE INCREMENT = ____ X ____ FT.

Comments: Pic 1410 - flag
1411 - gen. grid
(A) Pic 1413 - buried sheet metal outside NE corner flag
~~1413~~ 1414 - gen finding
0835 - NJ#

1415 all consolidated scrap

WESTON SOLUTIONS

GRID SWEEP LOG

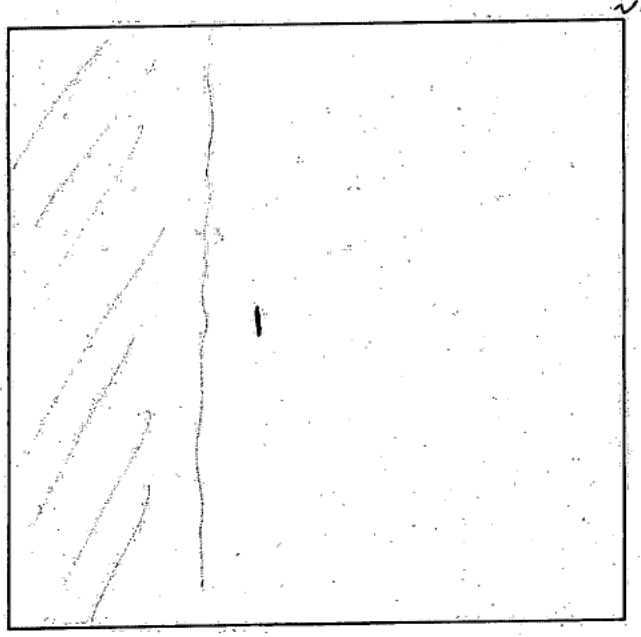
Project Name: New Jersey Fireworks

AOE: 4 Grid: 1 50x30

Date: 25 Oct 11

Team No.: 1

Sift: ☐ Mag & Dig ☑



LOCATION	ITEM TYPE	QUANTITY	DEPTH	INSTRUMENT
1	Empty 40mm fuse cap base fuze casing	1	6"	White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT

EACH LINE INCREMENT = ____ X ____ FT.

Comments: ~~Pic 1396~~ #1 Pic 1397

Pic 1398 } Same w/ #1
1399

WESTON SOLUTIONS

GRID SWEEP LOG

Project Name: New Jersey Fireworks

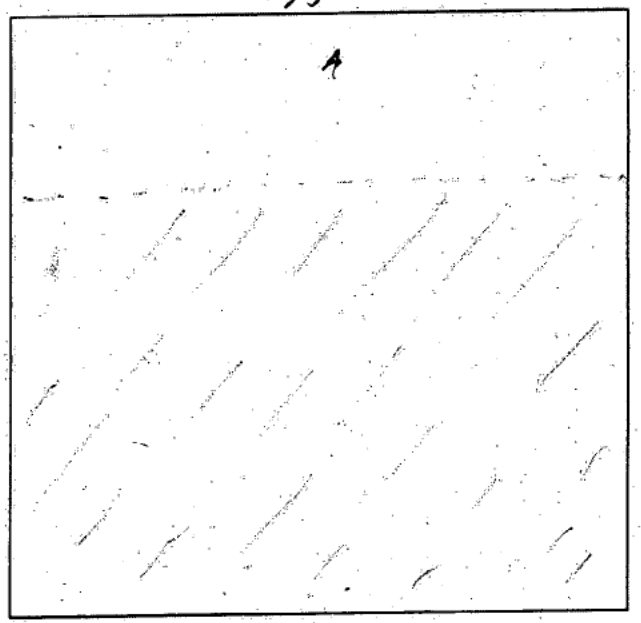
AOE: 4 Grid: 2 75x20

Date: 24 Oct 11

Team No.: 1

Sift: ☐ Mag & Dig ☑

75



LOCATION	ITEM TYPE	QUANTITY	DEPTH	INSTRUMENT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT

EACH LINE INCREMENT = ___ X ___ FT.

Comments: 1025 – 1110 Pic 1396

A wire through plastic pipe ~ 8½"

WESTON SOLUTIONS

GRID SWEEP LOG

Project Name: New Jersey Fireworks

AOE: 4 Grid: 3 30 x 30

Date: 25 Oct 11

Team No.: 1

Sift: ☐ Mag & Dig ☑

30 NE

30

LOCATION	ITEM TYPE	QUANTITY	DEPTH	INSTRUMENT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT

EACH LINE INCREMENT = ____ X ____ FT.

Comments: ~~Pic~~ 1400.mov ~~~4#~~ KPD
1401.mov ~14#
1310 - 1350
Pic 1402.jpg

WESTON SOLUTIONS

GRID SWEEP LOG

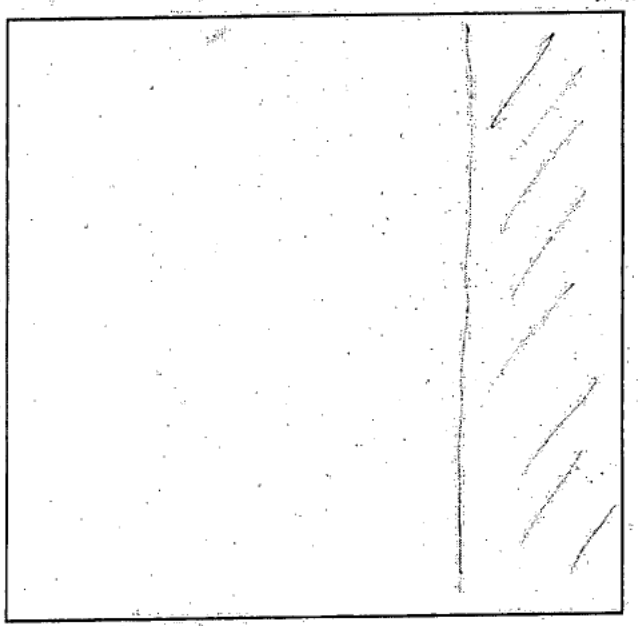
Project Name: New Jersey Fireworks

AOE: 4 Grid: 4 30x20

Date: 25 Oct 11

Team No.: 1

Sift: ☐ Mag & Dig ☑



EACH LINE INCREMENT = ____ X ____ FT.

LOCATION	ITEM TYPE	QUANTITY	DEPTH	INSTRUMENT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT

Comments:

1350 - 1415 ~ 26

Pic 1403

WESTON SOLUTIONS

GRID SWEEP LOG

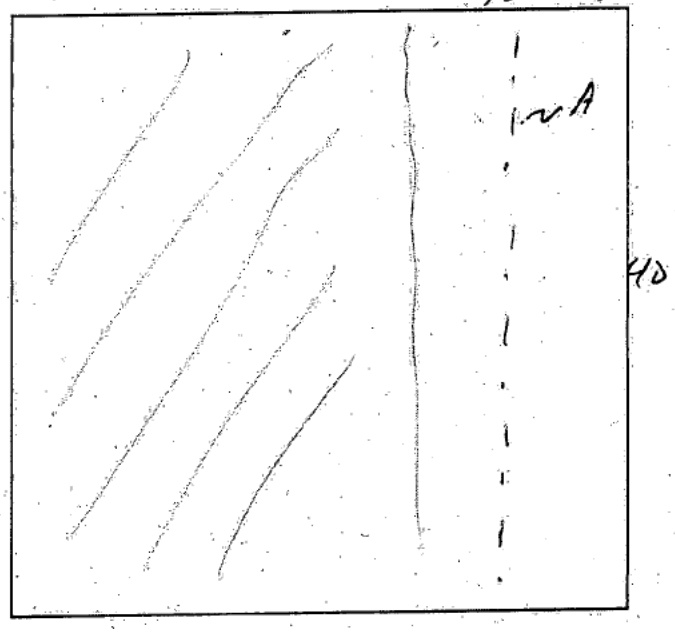
Project Name: New Jersey Fireworks

AOE: 5 Grid: 1 10x40

Date: 26 Oct 11

Team No.: 1

Sift: ☐ Mag & Dig ☑



LOCATION	ITEM TYPE	QUANTITY	DEPTH	INSTRUMENT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT

EACH LINE INCREMENT = ____ X ____ FT.

Comments: A: Pipe through center — PIC: 1421 - flag
1422 - gen. grid
(org. flags delin. pipe)

1035 - 1050

WESTON SOLUTIONS

GRID SWEEP LOG

Project Name: New Jersey Fireworks

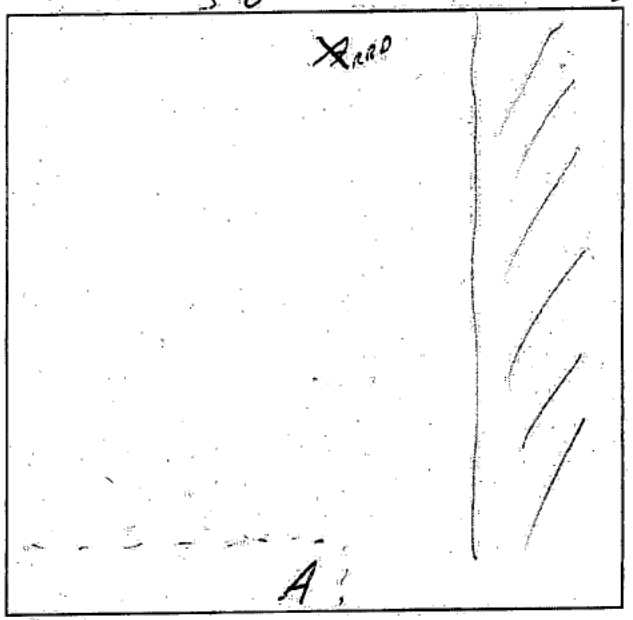
AOE: 5 Grid: 2 30x40

Date: 26 Oct 11

Team No.: 1

Sift: ☐ Mag & Dig ☑

30 NE



LOCATION	ITEM TYPE	QUANTITY	DEPTH	INSTRUMENT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT

EACH LINE INCREMENT = ___ X ___ FT.

Comments: A: Bldg. debri & banding

Pic 1420 : flag
1423 : gen. grid

1000 - 1020

WESTON SOLUTIONS

GRID SWEEP LOG

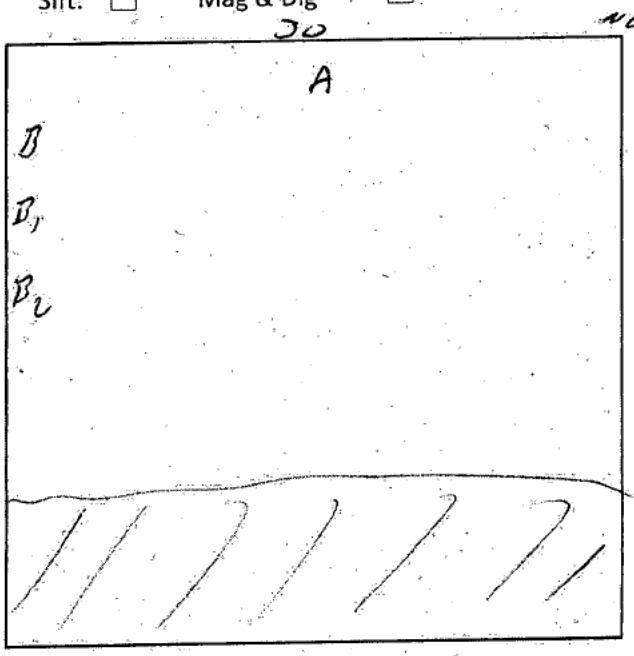
Project Name: New Jersey Fireworks

AOE: 5 Grid: 3 20 x 20

Date: 26 Oct 11

Team No.: 1

Sift: ☐ Mag & Dig ☑



LOCATION	ITEM TYPE	QUANTITY	DEPTH	INSTRUMENT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT

EACH LINE INCREMENT = ____ X ____ FT.

Comments: ~~Pic 1413~~ - flag

Pic 1416, 1417 flag

1000 – 1120

A: Pipe Pic ~~1418~~ 1418

B - B2: Terra Cota pipe Pic 1419

Consolidate

TOTALS

5-1,2,3 – 110#

Pic # 1424

WESTON SOLUTIONS

GRID SWEEP LOG

Project Name: New Jersey Fireworks

AOE: 6 Grid: 1 20x20

Date: 27 Sept 11

Team No.: 1

Sift: ☐ Mag & Dig ☑

20 NS

20

LOCATION	ITEM TYPE	QUANTITY	DEPTH	INSTRUMENT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT

EACH LINE INCREMENT = ___ X ___ FT.

Comments: Pic 1439 : flag
Pic 1440 : consolidated 6/1, 6/2 NS

WESTON SOLUTIONS

GRID SWEEP LOG

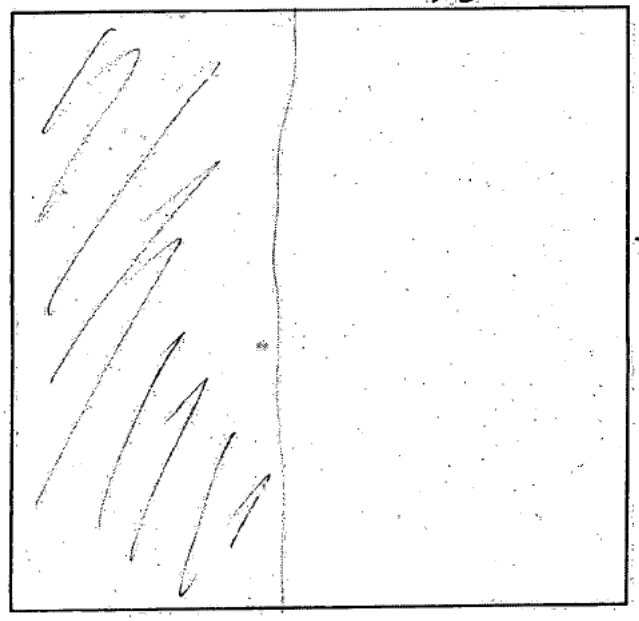
Project Name: New Jersey Fireworks

* AOE: 6 Grid: 2 10x20

Date: 27 Oct 11

Team No.: 1

Sift: ☐ Mag & Dig ☑



LOCATION	ITEM TYPE	QUANTITY	DEPTH	INSTRUMENT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT

EACH LINE INCREMENT = ____ X ____ FT.

Comments: Pic 1438 - flag Note: sparkler wire throughout

* Orig. mk 7/2 increm; corrected to 6/2

WESTON SOLUTIONS

GRID SWEEP LOG

Project Name: New Jersey Fireworks

AOE: 6 Grid: 3 NW

Date: 27 Oct 11

Team No.: 1

Sift: ☐ Mag & Dig ☑

10 NE

10

LOCATION	ITEM TYPE	QUANTITY	DEPTH	INSTRUMENT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT

EACH LINE INCREMENT = ____ X ____ FT.

Comments: Pic 1436: flag

Pic 1437: findings (spoon, wire) ~3 ft

WESTON SOLUTIONS

GRID SWEEP LOG

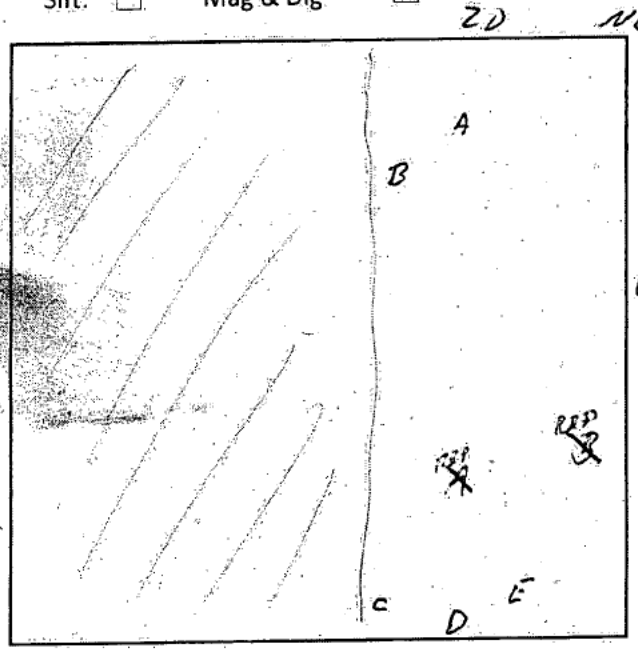
Project Name: New Jersey Fireworks

AOE: 7 Grid: 1 60x20

Date: 26 Oct 11

Team No.: 1

Sift: ☐ Mag & Dig ☑



LOCATION	ITEM TYPE	QUANTITY	DEPTH	INSTRUMENT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT

EACH LINE INCREMENT = ____ X ____ FT.

Comments:
A: cable
B: rod
C, D, E: pipe; Pic 1426 pipe 1427
Pic 1425: flag
Pic 1428 gun findings
~12"
1310 - 1350

WESTON SOLUTIONS

GRID SWEEP LOG

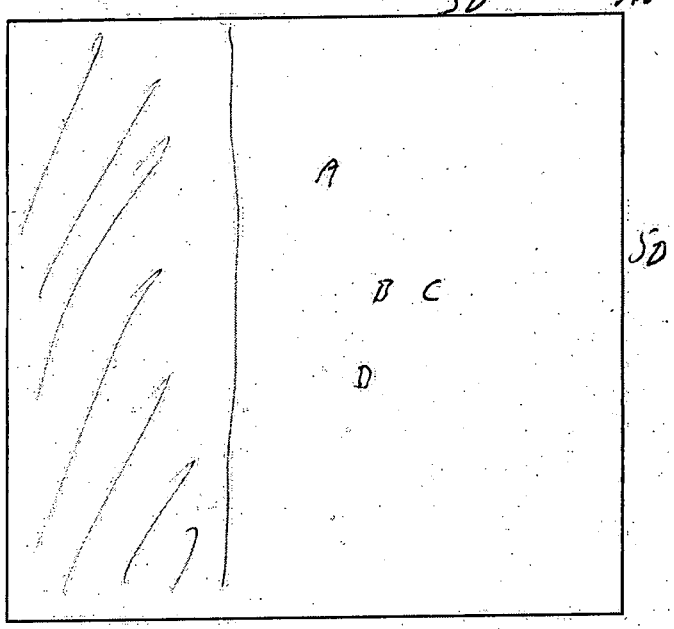
Project Name: New Jersey Fireworks

AOE: 7 Grid: 2 50×30

Date: 26Oct11

Team No.: 1

Sift: ☐ Mag & Dig ☑



LOCATION	ITEM TYPE	QUANTITY	DEPTH	INSTRUMENT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT
				White's XLT

EACH LINE INCREMENT = ____ X ____ FT.

Comments: Pic 1429: flag

A: rod
B: rod
C: rod
D: concrete slab

Pic 1434: findings ~20ft

1400 –

APPENDIX E
PHOTO LOG

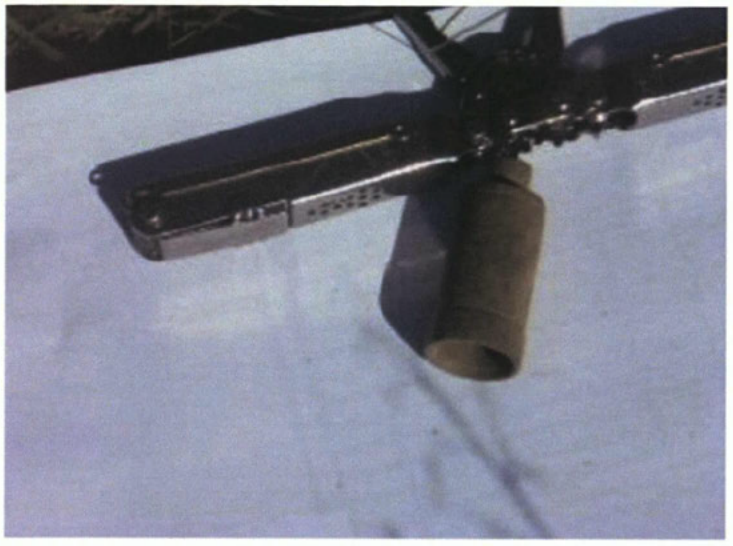
Photo Log

UXO Technicians performing mag and dig survey.

Expended grenade fuze located in Excavation Area #2, Grid #7.

Metal scrap recovered during intrusive activity.

UXO Technicians using lanes to guide mag and dig survey.



Empty 40mm base fuze casing recovered in Excavation Area #4, Grid #1.

UXO Technicians performing mag and dig survey.

UXO Technicians using lanes to perform mag and dig survey.

Metal scrap recovered during intrusive investigations.